

FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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With regard to photographs and descriptions of new British machines and those of our Allies, and other information which may be of help to our enemies, it should be noted that the Editor of FLIGHT, in the National interest, submits all matter of this character to the Official Press Censor before publication. Hence our readers will appreciate that many new departures in construction or advances in detail work are necessarily held back for the present rather than the smallest risk should be run of helping those who are so strenuously fighting the Allies for the enforcement of their "Kultured" militarism.—ED.

EDITORIAL COMMENT.

Aircraft in Naval Warfare.

"His Majesty's aeroplane ship 'Ark Royal' is in attendance, with a number of seaplanes and aeroplanes of the Naval Wing."

These few words formed the final sentence of the announcement issued by the Admiralty on Saturday last dealing with the bombardment of the Dardanelles Forts by a combined British and French fleet. Simple as the sentence is in itself, it is yet full of deep significance for those associated with the flying movement, for it presages the full recognition of aircraft as an arm of the Navy, enabling the utilisation of its manifold possibilities in any section of the "Seven Seas" where it may be necessary for British fleets to conduct warlike operations. Of course aeroplanes and

seaplanes have been used for some time in conjunction with warships, as, for instance, in the operations along the Belgian coast, but in these cases the aircraft have had the advantage of operating, if not actually from, at any rate not far from a home base. In the case of those which played their part in the action at the entrance to the Dardanelles, however, their headquarters was the new aeroplane-carrying ship "Ark Royal," the first of what will certainly be a new class of naval vessel, which will no doubt form a by no means unimportant unit in all future naval squadrons. Although naturally details are lacking in the official report as to the actual work accomplished by the aircraft in directing the work of the naval guns, there is sufficient indication that the assistance rendered was of a useful and valuable nature. This is sufficiently indicated by the official announcement that the bombardment was renewed on the second day "after aerial reconnaissance."

From an aviation point of view this incident, insignificant as it probably appears to the majority of the general public, will be an historic one, marking, as we have said, the entrance of aircraft as a definite arm in naval operations wherever they may be conducted. As time goes on, the duties assigned to aircraft in warfare will continue to extend rather than to diminish, as, instead of being, as some naval and military authorities have been inclined to think, simply an auxiliary of some doubtful value, to the work of the soldiers and guns of the army, and the ships and men of the navy, it is now recognised that the services rendered by pilots and observers of aircraft can be of the utmost importance in the successful prosecution of operations both on land or sea.

It is a somewhat dramatic entrance that the H.M.S. "Ark Royal" makes into the arena of naval operations, for practically nothing has been heard of this vessel since it was announced that the name had been selected for the seaplane carrying ship, which was being built by the Blyth Shipbuilding and Engineering Co., and provision for which had been made in the 1914-15 Naval Estimates. This, of course, is not the first vessel which has been utilised for such a purpose, as several of H.M. ships have been identified with the activities of the Naval Wing of the Royal Flying Corps, or, as it is now termed, the Royal Naval Air Service, notably H.M.S. "Hermes," which, it is understood, was engaged on such service

at the time she was torpedoed in the Channel last November. In these cases, however, the ships were generally cruisers of an old type which had been adapted for their new purpose, and consequently possessed all the disadvantages of makeshifts. In the case of the raid on Cuxhaven on Christmas Day, as mentioned in the official memorandum on p. 142, three seaplane carriers were utilised, these being cross-Channel steamers which had undergone certain modifications. The "Ark Royal," however, is the first of a new line of which doubtless many more will ere long take their place as units in the "King's Navee."

With regard to the quaint name bestowed on the vessel, this dates back to the time of the Spanish Armada, having been borne by an 800 ton ship built by Raleigh and sold to Queen Elizabeth. It was originally known as the "Ark"; subsequently changed to the "Ark Raleigh," and finally to the "Ark Royal," under which name it took part in the famous chase of the Spanish vessels, and in the subsequent capture of Cadiz. Incidentally, it would be of interest to know why Raleigh chose this name. Why the Admiralty decided to revive the old-world-sounding "Ark Royal" when the new seaplane-carrier had to be named, is, as Mr. Archibald Hurd points out in the *Daily Telegraph*, evident.

"This ship is the base of the aerial intelligence service of the squadron to which she may be attached from time to time. When Noah had survived the Flood, 'he sent forth a dove from him to see if the waters were abated from the face of the earth.' At last the dove brought back an olive leaf, and Noah knew that all was well. The modern Ark carries seaplanes—or what the Germans call Taubes or doves. She sends them forth over the waters to see what the enemy is doing; they do not bring back olive leaves, but by means of wireless telegraphy they signal their intelligence. Moreover, they carry guns to defend themselves from an attack by an aerial enemy—all of which goes to show how far we have travelled since the time of the Flood.

"In the years to come every fleet will have its seaplane-carrier. The aerial machines will have folding 'wings,' so that they can be packed closely together. When one is required to carry out a reconnaissance, it will be brought out and placed on the launching-stage, its 'wings' will be extended, the pilot and observer will take their places, the engine will be started, and away it will fly, sending back, even when out of sight, a series of reports, on which the admiral will prepare his plans."

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Air Raid on Essex.

No damage of any consequence was caused as a result of the raid on the Eastern Counties last Sunday evening. The hostile aeroplane was first seen in the neighbourhood of Braintree, where an incendiary bomb was dropped without exploding, while another was dropped at Coggeshall with the same result. The aeroplane was next seen at Colchester, when a bomb was dropped at the back of a house in Butt Road. As the result of the explosion the windows and doors at the back of the house, as well as those of the adjoining houses, were blown in. The inhabitants of the house, Quartermaster-Sergeant Rabjohn and his wife and child, had marvellous escapes from the flying bullets. The aeroplane also dropped a bomb at Mark's Tey.

The Norfolk Air Raid.

ARRANGEMENTS having been made for the committee appointed by the Government to consider claims for relief in respect of the damage done in the bombard-

The Cuxhaven Raid.

Elsewhere in the present issue we publish the official statement which has now been issued by the Admiralty in connection with the daring raid of the Schillig Roads at the mouth of the Elbe off Cuxhaven, carried out by seven officers of the R.N.A.S. on Christmas Day. Although the Memorandum does not bring to light anything new, there are one or two points in it that call for notice.

In the first place attention may be drawn to the fact that the undertaking was carried out primarily as an air reconnaissance, that is, to secure some information with regard to the number, strength, and disposition of the enemy's bottled-up fleet, advantage being taken of the opportunity of attacking with bombs *points of military importance*. We have purposely italicised the last four words in order to bring out the difference in methods and purpose between that which is undertaken by our naval and military authorities and the despicable raids on unfortified places in this country that the Germans have so far indulged in. It serves to emphasise, too, the statement in the Admiralty announcement of last week regarding the second air raid on the Belgian coast towns, that "Instructions are always issued to confine the attacks to points of military importance, and every effort is made by the flying officers to avoid dropping bombs on any residential portions of the towns."

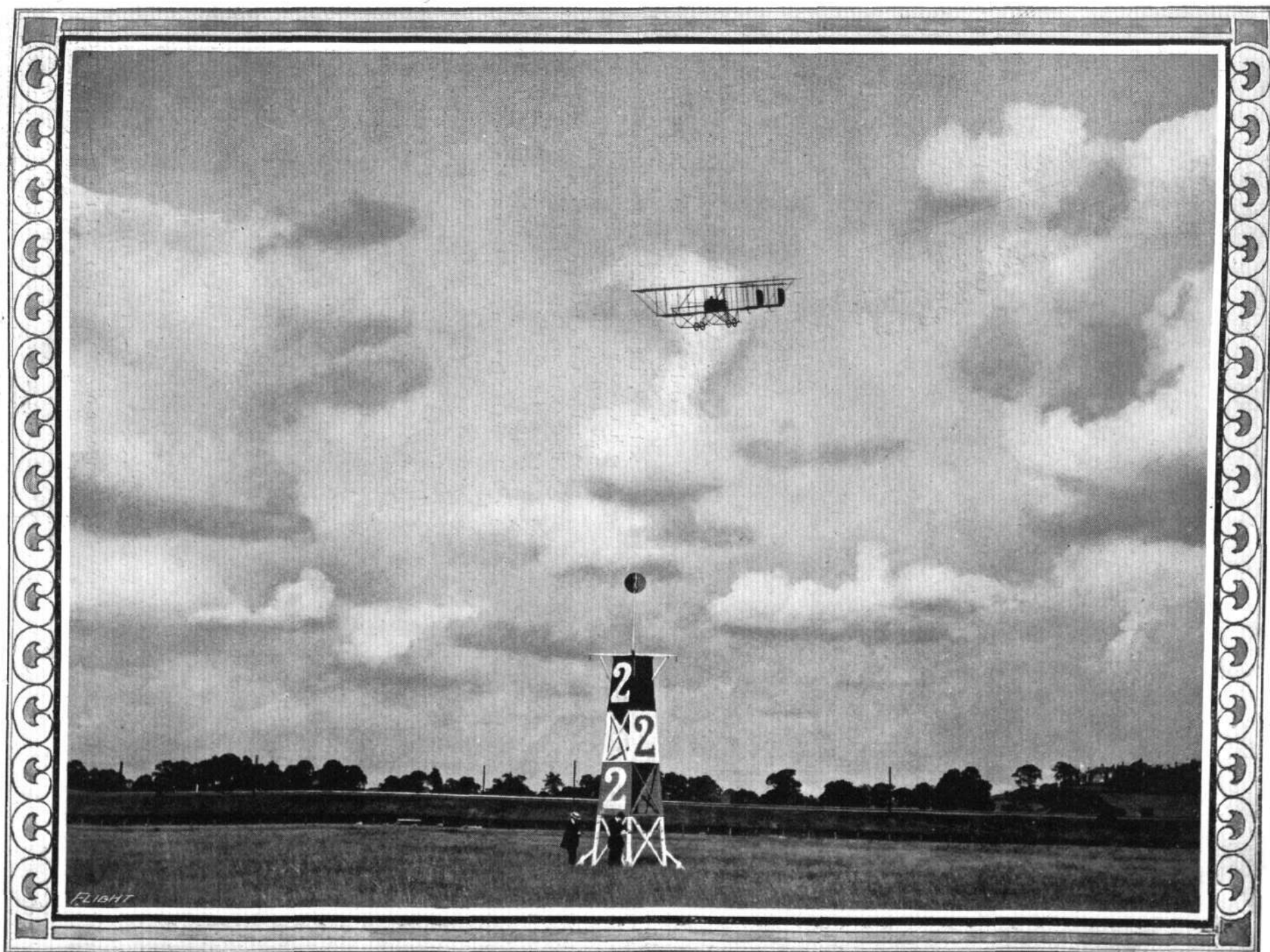
It will be noted that, as in the case of the successful raids on Dusseldorf, Friedrichshafen, &c., those in charge of the operations, as well as the flying officers actually taking part, have been commended by the Admiralty, and in some cases there has been further reward in the shape of promotion, while on two of the officers, H.M. the King has conferred the Distinguished Service Order. Another welcome feature is the recording of the names of those who acted as observers on the aircraft, two of these being Chief Petty Officer Mechanics, who have been awarded the Distinguished Service Medal for the part they took in the raid. These latter honours will be fully appreciated by the lower deck. While not for a moment undervaluing the work done by the flying officers, we think that there is at times a tendency to forget the men on whom the duty falls of keeping the aircraft *au point*. Although a skilled pilot and a reliable machine are both vitally necessary, the staff of men employed behind the scenes in ensuring that the aircraft are ready for every emergency call, form no less an important part of the service, and it is pleasing to record this recognition of their work.

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ment of Scarborough, &c., to also investigate damage to persons and property in connection with the airship raid on Norfolk, it is notified that all claims must be forwarded to the Secretary, East Coast Raid Committee, Board of Education, Whitehall, S.W., not later than March 5th.

The Flying Services Fund.

FROM the official notices of the Royal Aero Club on page 144 it will be seen that there has been a substantial addition to the amount received for the Flying Services Fund, the total now being close on £7,000. Among the donations received during the past week may be noted £250 each from the Daimler Co. and Vickers, Ltd., £100 from Messrs. Accles and Pollock, £50 from Messrs. G. and J. Weir, £43 from Murray's Club, £22 os. 6d. from the officers and men of the Central Air Office, Sheerness, while among other subscribers may be noted Vice-Admiral Mark Kerr, R.N., Mr. W. Joynson-Hicks, M.P., Lady Ramsden, Sir T. V. S. Gooch, Bart., the Zenith Carburettor Co., &c.



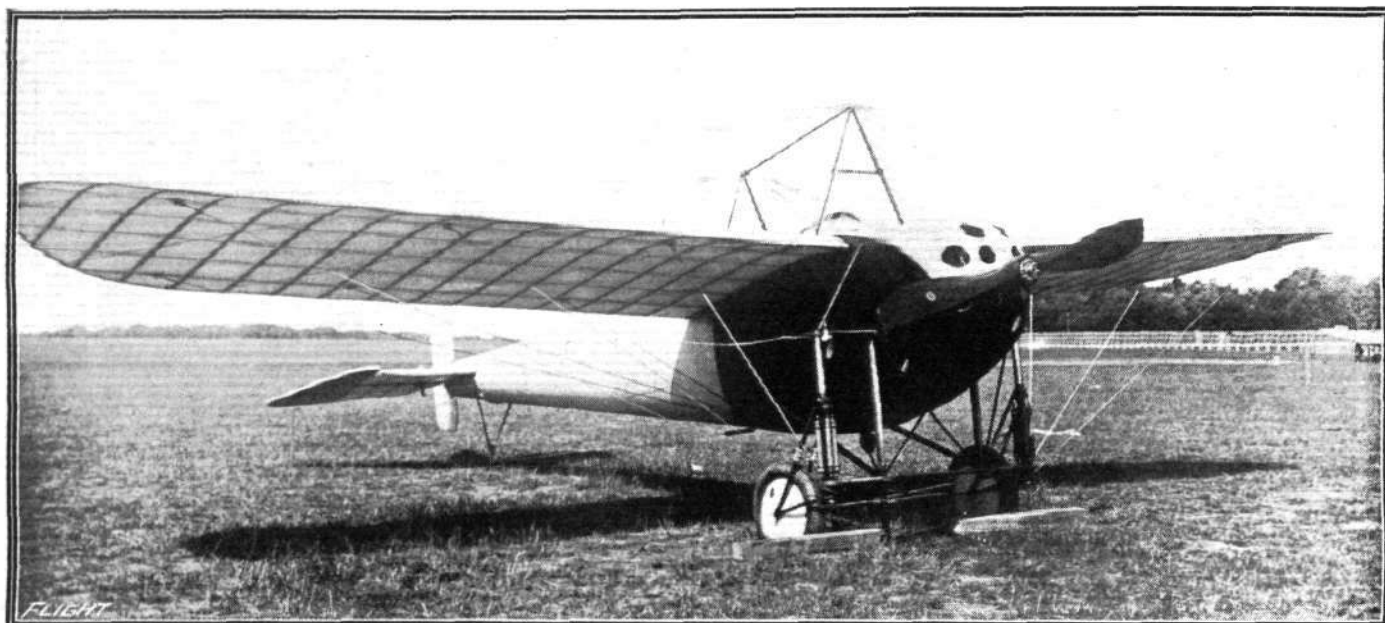
WHEN THE PUBLIC USED TO GATHER AT HENDON.—A reminiscence of Flight Commander Claude Grahame-White on a Maurice-Farman biplane.

"Flight" Copyright.

THE 160 H.P. ARMoured BLÉRIOT TWO-SEATER.

JUST before war was declared, M. Blériot had started experiments with a new type of armoured monoplane, fitted with a 160 h.p. motor, and although the tests had to be abandoned, the two machines of the type which had been constructed were pressed into service, and both

The body is of the "coque" type, and is of ample depth, so as to allow the gunner to use his gun either when standing inside the machine or when seated, and to permit of access to the holes at the side of the armoured casing. This casing extends from the extreme



THE 160 H.P. ARMoured BLÉRIOT TWO-SEATER.—A three-quarter front view.

of them—one in the hands of Vedrines—have rendered a good account of themselves at the Front.

As will be seen from the photographs which we reproduce, with the exception of the body and allowing for the difference in size and power, there is comparatively little departure from what may be termed standard Blériot practice, the wings, which have rather a pronounced dihedral, being identical in general construction and shape to those fitted to the ordinary type of machine. Lateral control is, as usual, effected by the warp of the

forward end of the body to the rear of the gunner's seat, and is made of 3 mm. chrome nickel steel, thus completely enclosing the engine—a 160 h.p. Gnome—the pilot, gunner, all tanks and the controls, and affording the maximum amount of protection against the effects of small gun and rifle fire; while the underneath portion of the body is well rounded, so as to minimise the penetrating power of a projectile, which strikes the armour at an angle. Suitably positioned holes are cut in the nose of the machine to allow of the



THE 160 H.P. ARMoured BLÉRIOT TWO-SEATER.—A three-quarter rear view.

wings, the warp wires being carried to the bottom pylon, which is enclosed within the body. The top load wires, it will be seen, are attached to the forward end of a double mast of somewhat similar design to that fitted to the "total visibility" type machine, which is mounted upon the body; while the top warp wires are carried up to the rear end of this structure.

entrance of sufficient air to cool the engine; and doors are provided, one on each side, beneath the wings and near the front (see the three-quarter front view), through which the gunner can fire at an object beneath the machine. The remainder of the framework of the body is embedded within a papier-mâché casing, over which canvas is sewn, with the object of minimising the risk of failure of a

machine in the air in the event of the framework being struck by a bullet; as it has been proved by experiment that the wood does not so readily splinter when enclosed in this fashion, as when exposed with no support.

The tail and the undercarriage call for little comment, as they so closely follow the usual Blériot practice. The tail skid is similar to that on the Blériot monocoque which was exhibited at the last Paris Show, being attached by wires and shock absorbers to the body and to the tail.

During tests conducted in France the machine was loaded up with a weight of 165 lbs. to compensate for

the absence of armament and projectiles, and the weight of the pilot, passenger and accessories amounted to 375 lbs., while sufficient fuel and oil was carried to enable a three hours' flight to be made. Under these conditions of loading it was required to attain a speed of 130 kiloms. per hour (81 miles per hour) in straight flight, be capable of climbing at the rate of 1,000 metres in ten minutes (328 ft. per min.), and land within a field of not more than 100 metres (109 yards in length). It speaks well for the design of the machine that despite the heavy load carried it was easily able to satisfy these requirements.

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AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

In the bi-weekly report from Field-Marshal Sir J. French, issued on Friday night, there was the following:—

"Our aircraft have carried out valuable reconnaissances, and have also successfully engaged the enemy's aeroplanes. One of our aviators recently attacked two German machines in succession; he drove off the first and left the second to be dealt with by our artillery, which brought it to the ground in the hostile lines."

In the bi-weekly report of Sir John French, issued on Tuesday night, it was stated:—

"5. Thick weather has handicapped the work of our aircraft."

In the descriptive account, dated February 16th, from an "Eye-witness" present with the British General Headquarters, issued through the Press Bureau on the 18th inst., there was the following:—

"In spite of disclaimers that the German activity on the Kaiser's birthday had no connection with that event, some people in Germany were evidently led to expect great successes on that anniversary. Here is a letter, dated January 25th, which was found on a prisoner:—

"It appears that for the Kaiser's birthday there is going to be a great attack. All the aviators and all the Zeppelins will be let loose against France. On the one hand the engineers will do their utmost, and on the other hand the artillery, and then a tremendous assault."

In the announcement issued by the Admiralty on Saturday regarding the bombardment of the Dardanelles forts, it was stated:—

"The action has been renewed this morning after aerial reconnaissance. His Majesty's aeroplane ship 'Ark Royal' is in attendance with a number of aeroplanes and seaplanes of the Naval Wing."

Sir J. Roper Parkington, Consul-General for Montenegro, has received the following official telegram from Cetinje:—

"On Friday an Austrian aeroplane passed over Cettinge, throwing four bombs in the town and one in the suburbs. Two women were killed and three children and one woman injured. King Nicholas immediately visited the unfortunate families, and rendered all possible assistance. This act of the Austrians in bombarding an open town, of which the population is entirely composed of non-combatants, has aroused the greatest indignation."

In the *communiqué* issued in Paris at midnight on the 17th, there was the following:—

"Our aeroplanes have bombarded the station of Freiburg, in Breisgau."

In the *communiqué* issued in Paris on Monday evening, it was stated:—

"A Zeppelin bombarded Calais this morning. It dropped ten projectiles, which killed five persons

belonging to the civilian population and did some slight damage to property."

In the official *communiqué* issued in Paris on Saturday, dealing with the operations from February 7th to 17th, there were the following references to aircraft work:—

"The incessant rain, the violent winds, and the low flying clouds have greatly hampered our aerial operations. The daily co-operation of our air service and artillery has nevertheless secured good results at several points. Reconnaissances and bombardments have often been attempted in the most perilous conditions and with success, such, for instance, as on the night of February 8th and 9th, when an aviator set out alone armed with eight bombs, to make a flight in the midst of a black night with a howling west wind whistling in his ears. He set his course for Ostend, towards which the wind helped to carry him at a great pace. At a height of only 120 metres he dropped his first bomb on an ammunition section. Over Ostend he dropped three bombs from a height of 250 metres on a spot apparently occupied by the headquarters staff. The violent explosion caused a tremendous commotion, and at once three searchlights tried to locate the aviator, who had turned to regain our lines. On the way back he threw his last two bombs, and they fell on a cantonment. Just then a searchlight discovered him, but the pilot, by a bold manoeuvre, escaped the path of the rays. Then all along the dunes the machine guns and rifles poured out a continuous fire on their invisible foe. By changing his direction the pilot eluded this fusillade and gained the sea. In spite of an unfavourable wind he succeeded at last in reaching our lines again, where he descended with the slightest damage after a flight of 40 mins."

"On February 11th another bombardment was carried out—also in the northern region—on the château where the German Headquarters Staff were lodged. Owing to a mishap to his engine on his return journey the pilot was flying very low indeed when crossing the enemy's trenches. There were some ten bullet holes in his planes when at last he regained our lines."

"This exploit and many others prove that the enemy are unable to stop our aviators. One aviator, in the course of a reconnaissance to the east of Ypres on February 10th, did not turn back in spite of 100 shots from a field gun. Again in Alsace, an Aviatik, armed with a machine gun, tried in vain to stop a French aviator. In spite of the fact that 20 bullets had pierced the machine, the pilot continued his journey, and threw eight bombs on Bollwiller Station and upon a motor spirit factory in the Bois Nonnenbruch. He ultimately returned safely to the aerodrome."

"Similarly on February 11th an aviator, who had been

dispatched with instructions to bombard an enemy position, was engaged on two occasions by a German aviator armed with a machine gun. Our aeroplane was hit by about 20 shots, but, nevertheless, continued its course and dropped eight bombs on the railway station at Bollwiller on the power station and into the Bois Nonnenbruch. The pilot and observer subsequently regained their own aerodrome safe and sound.

"In Belgium, whilst the British aviators were bom-

barding Ostend, a squadron of seven French machines dropped thirty bombs on the aeroplane sheds that the Germans had built at Ghistelles.

"By their bold raids, by their methodical work, by their fire control work in connection with the French artillery the French aviators have acquired an incontestable mastery and superiority. In the subsequent developments of operations the fifth arm will certainly be called upon to play an important part."

THE CUXHAVEN RAID.

A SUPPLEMENT to the *London Gazette* issued on the 18th contained the following Admiralty Memorandum on the combined operations by H.M. ships and naval seaplanes on December 25th, 1914:—

"On December 25th, 1914, an air reconnaissance of the Heligoland Bight, including Cuxhaven, Heligoland, and Wilhelmshaven, was made by naval seaplanes, and the opportunity was taken at the same time of attacking with bombs points of military importance. The reconnaissance involved combined operations by light cruisers, destroyers, and seaplane-carriers, under Commodore Reginald Y. Tyrwhitt, C.B., and submarines acting under the orders of Commodore Roger Keyes, C.B., M.V.O.

"The vessels detailed for the operations arrived at their rendezvous before daylight, and as soon as the light was sufficient the seaplanes were hoisted out and despatched. The following Air Service officers and observers took part in the reconnaissance:—

Pilots.

Flight-Commander (now Squadron-Commander) Douglas Austin Oliver.

Flight-Commander Francis Esme Theodore Hewlett.

Flight-Commander Robert Peel Ross.

Flight-Commander Cecil Francis Kilner.

Flight-Lieutenant (now Flight-Commander) Arnold John Miley.

Flight-Lieutenant Charles Humphrey Kingsman Edmonds.

Flight Sub-Lieutenant (now Flight-Lieutenant) Vivian Gaskell Blackburn.

Observers.

Lieutenant Erskine Childers, R.N.V.R.

C.P.O. Mechanic James W. Bell.

C.P.O. Mechanic Gilbert H. W. Budds.

"The seaplane carriers were commanded by:—

Squadron-Commander Cecil J. L'Estrange Malone.

Flight-Commander Edmund D. M. Robertson.

Flight-Commander Frederick W. Bowhill.

"At the beginning of the flight the weather was clear, but on nearing the land the seaplanes met with thick weather, and were compelled to fly low, thus becoming exposed to a heavy fire at short range from ships and shore batteries. Several machines were hit, but all

remained in the air for over three hours, and succeeded in obtaining valuable information regarding the disposition of the enemy's ships and defences. Bombs were also dropped on military points. In the meanwhile German submarines, seaplanes, and Zeppelins delivered a combined attack upon the light cruisers, destroyers, and seaplane-carriers, but were driven off.

"Flight-Commanders Kilner and Ross and Flight-Lieutenant Edmonds regained their ships. Flight-Commander Oliver, Flight-Lieutenant Miley, and Flight Sub-Lieutenant Blackburn became short of fuel, and were compelled to descend near Submarine E.11, which with other submarine vessels was watching inshore to assist any seaplane that might be in difficulties. Lieutenant-Commander Martin E. Nasmith, commanding E.11., although attacked by an airship, succeeded, by his coolness and resource, in rescuing the three pilots. Flight-Commander Hewlett, after a flight of three and a half hours, was compelled to descend on account of engine trouble, but was rescued by a Dutch trawler, landed in Holland, and returned safely to England.

"An expression of their Lordships' appreciation has been conveyed to Commodore Keyes (Commodore S.), Commodore Tyrwhitt (Commodore T.), and to Captain Sueter (Director of the Air Department) for their share in the combined operations which resulted in this successful reconnaissance.

"The King has been graciously pleased to give orders for the following appointments to the Distinguished Service Order:—

To be Companions of the Distinguished Service Order.

Captain Cecil Francis Kilner, R.M.L.I. (Flight-Commander).

Lieutenant Charles Humphrey Kingsman Edmonds, R.N. (Flight-Lieutenant).

"The following awards have also been made:—

To receive the Distinguished Service Medal.

Chief Petty Officer Mechanic James William Bell, No. M. 489.

Chief Petty Officer Mechanic Gilbert Howard William Budds, No. 271764."

WAR HONOURS.

IN a supplement to the *London Gazette* issued on the 18th inst. it was announced that His Majesty the King has been graciously pleased to approve of the undermentioned rewards, dated February 18th, for services rendered in connection with operations in the field:—

Royal Flying Corps.

To be Brevet Lieutenant-Colonels.

Major (temporary Lieutenant-Colonel) J. F. A. Higgins, D.S.O. (Royal Artillery).

Captain and Brevet Major (temporary Lieutenant-Colonel) F. H. Sykes (15th Hussars).

To be Companions of the Distinguished Service Order.

Captain and Brevet Major (temporary Lieutenant-Colonel) C. J. Burke (Royal Irish Regiment).

Captain and Brevet Major J. M. Salmond (Royal Lancaster Regiment).

Captain (temporary Major) H. Musgrave (Royal Engineers).

Lieutenant (temporary Captain) W. H. C. Mansfield (Shropshire Light Infantry).

Lieutenant H. D. Harvey-Kelly (Royal Irish Regiment).

Lieutenant G. W. Mapplebeck (Liverpool Regiment).

Awarded the Military Cross.

Captain (temporary Major) G. S. Shephard (Royal Fusiliers).

It was also stated that His Majesty the King has been graciously pleased to approve of the appointment of the undermentioned officer to be Companion of the Distinguished Service Order, in recognition of gallantry and devotion to duty whilst serving with the Expeditionary Force:—

Captain Felton Vesey Holt, the Oxfordshire and Buckinghamshire Light Infantry and Royal Flying Corps.

For gallantry on January 22nd, 1915, in engaging single-handed a group of twelve German aeroplanes which were attacking the town of Dunkirk. He was subsequently joined by two of our own biplanes, which resulted in one of the German machines being brought down and its pilot and observer being captured.

MENTIONED IN DESPATCHES.

IN the lists of names of those recommended by Field-Marshal Sir John French for gallant and distinguished service in the field, published in a special supplement of the *London Gazette* on the 17th inst., were the following :—

Royal Navy.

Samson, Wing-Commander C. R., D.S.O.
Davies, Squadron-Commander R. B.
Collett, Flight-Lieutenant C. H., D.S.O.
Peirse, Flight-Lieutenant R. E. C.

Royal Flying Corps.

Abercromby, Lieutenant (temporary Captain) R. O., Gordon Highlanders.
Becke, Brevet Major J. H. W., Notts and Derby Regiment.
Borton, Captain A. E., Royal Highlanders.
Brock, Lieutenant (temporary Captain) H. le M., Royal Warwickshire Regiment.
Carden, Major A. D., Royal Engineers.
Chinnery, Lieutenant (temporary Captain) E. F., Coldstream Guards. (Since killed in action.)
Cholmondeley, Captain R., Rifle Brigade.

Cogan, Capt. F. J. L., R.A.

Corballis, Lieutenant (temporary Captain) E. R. L., Royal Dublin Fusiliers.

Higgins, Major (temporary Lieutenant-Colonel) J. F. A., D.S.O., Royal Artillery.

Hughes Hallett, Captain H. H., North Staffordshire Regiment.

Humphreys, Lieutenant G. N. (S.R.).

James, Lieutenant (temporary Captain) B. T., R.E.

Lywood, Second Lieutenant O. G. W. G., Norfolk Regiment.

Maclean, Captain (temporary Major) A. C. H., Royal Scots.

Malcolm, Second Lieutenant G. J., Royal Artillery.

Marsh, Captain A. C. E., Royal Artillery.

Martyn, Captain R. B., Wiltshire Regiment.

Musgrave, Major H., Royal Engineers.

Roche, Lieutenant (temporary Captain) H. J. A., Royal Munster Fusiliers. (Since killed.)

Salmond, Major W. G. H., Royal Artillery.

Shekleton, Lieutenant A., Royal Munster Fusiliers.

Shephard, Captain (temporary Major) G. S., Royal Fusiliers.

Small, Lieutenant F. G., Connaught Rangers.

Strange, Second Lieutenant L. A., Dorset Regiment.

Todd, Captain G. E., Welsh Regiment.

Wadham, Second Lieutenant V. H. M., Hampshire Regiment.

THE BRITISH AIR SERVICES.

UNDER this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the *LONDON GAZETTE*, it is not repeated in this column.

Royal Naval Air Service.

THE following was announced by the Admiralty on the 15th inst. :—

Messrs. J. S. Fleming Morrison and F. J. E. Feeny entered as Probationary Flight Sub-Lieutenants and appointed to the "President," additional, for Royal Naval Air Service. To date Feb. 9th.

THE following announcement was made by the Admiralty on the 19th inst. :—

B. S. Fowler entered as Flight Lieutenant for temporary service, and appointed to the "President," additional, for Royal Naval Air Service. To date Feb. 1st.

Acting Lieut. L. Lidderdale Atherton, R.N.R., transferred to Royal Naval Air Service, temporary, as Flight Lieutenant, and appointed to the "President," for Royal Naval Air Service. To date Feb. 18th.

THE following announcement was made by the Admiralty on the 23rd inst. :—

W. H. Greer entered as Probationary Flight Sub-Lieutenant, for temporary service, and G. H. Jackson entered as Probationary Flight Sub-Lieutenant, and both appointed to the "President," additional, for R.N.A.S. To date Feb. 21st.

Royal Flying Corps (Military Wing).

THE following appeared in a supplement to the *London Gazette* issued on the 18th inst. :—

The undermentioned appointments are made :

Squadron-Commanders and to be temporary Majors; Feb. 8th, 1915: Capt. B. R. W. Beor, R.A., from a Flight-Commander; Capt. F. V. Holt, Oxfordshire and Buckinghamshire Light Infantry, from a Flight-Commander.

Flight-Commanders and to be temporary Captains; Feb. 8th, 1915: Lieut. C. G. S. Gould, R.A., from a Flying Officer; Lieut. G. F. Pretyman, Prince Albert's (Somerset Light Infantry), from a Flying Officer; Lieut. R. J. F. Barton, Royal Scots Fusiliers, from a Flying Officer; Lieut. W. R. Read, 1st (King's) Dragoon Guards, from a Flying Officer. Capt. C. F. De S. Murphy,

Missing Naval Aviators.

THE following statement was issued by the Official Press Bureau on Wednesday evening :—

"The Secretary of the Admiralty regrets to announce that in the recent naval air attacks on the Ostend-Zeebrugge-Bruges districts, four flying officers were reported to be missing. One of these officers—Flight-Lieut. D. Murray—has since reported himself from

Princess Charlotte of Wales's (Royal Berkshire Regt.), from a Flying Officer; Feb. 8th, 1915.

Special Reserve. Supplementary to Regular Corps.—Second Lieutenants to be Lieutenants; Jan. 22nd, 1915: Robert R. Smith-Barry and Lionel S. Metford. Second Lieut. Victor A. Barrington Kennett to be Lieutenant; Jan. 22nd, 1915.

THE following appeared in the *London Gazette* issued on the 19th inst. :—

Special Reserve. Supplementary to Regular Corps.—The undermentioned Second Lieutenants (on probation) are confirmed in their rank: F. W. H. Lerwill, O. Mansell-Moullin, and M. G. Christie.

THE following appeared in a supplement to the *London Gazette* issued on the 20th inst. :—

The undermentioned appointments are made :

Flying Officers: Second Lieut. J. C. Joubert de la Ferte, Special Reserve; dated Oct. 19th, 1914. Second Lieut. J. P. Inglefield, Special Reserve; dated Feb. 1st, 1915. Dated Feb. 4th, 1915: Second Lieut. F. W. H. Lerwill, Special Reserve; Second Lieut. E. H. Mitchell, 4th Home Counties (Howitzer) Brigade, Royal Field Artillery, Territorial Force; Second Lieut. O. Mansell-Moullin, Special Reserve; Second Lieut. M. G. Christie, Special Reserve.

Special Reserve. Supplementary to Regular Corps.—The undermentioned to be Second Lieutenants (on probation): Jack Oliver Cooper; dated Jan. 29th, 1915. Harold MacDonnell O'Malley; dated Feb. 1st, 1915.

Central Flying School.

THE following appeared in the *London Gazette* issued on the 19th inst. :—

The undermentioned appointments are made :

Instructor Lieut. (temporary Capt.) A. H. L. Soames, 3rd (King's Own) Hussars, a Flight Commander, Military Wing, vice Lieut. (temporary Capt.) T. O'B. Hubbard, Special Reserve. Dated Feb. 9th, 1915.

Officer in Charge of Transport (graded as a Flight Commander): Second Lieut. (temporary Capt.) C. H. Saunders, Special Reserve, vice Capt. D. Le G. Pitcher, Indian Army. Dated Jan. 5th, 1915.

THE following appeared in a supplement to the *London Gazette* issued on the 22nd inst. :—

The undermentioned appointment is made :

Experimental Officer (graded for purposes of pay as a Flight Commander): Second Lieut. the Hon. W. F. F. Sempill (Master of Sempill), Special Reserve, a Flying Officer. Dated Feb. 9th, 1915.

Flushing. Lieut. Murray was compelled to alight in the open sea, and was eventually picked up by a Dutch torpedo boat.

"The three other officers reported missing are :

Flight-Lieut. E. G. Rigall,
Flight-Lieut. Hon. D. O'Brien,
Flight-Sub-Lieut. T. Spencer,

and it is regretted that no further news has been obtained of them."

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

SPECIAL COMMITTEE MEETING.

A SPECIAL MEETING of the Committee was held on Tuesday, the 23rd inst., when there were present: Prof. A. K. Huntington, in the Chair, Mr. Griffith Brewer, Mr. Ernest C. Bucknall, Mr. C. F. Pollock, and the Assistant Secretary.

New Members.—The following New Members were elected:—

Neville Gwyn Gwynne.
Andrew Claphen Hunter.
Flight Lieut. R. G. Lock, R.N.A.S.
Lieut. L. T. G. Mansell.

Temporary Honorary Member.—Mr. Hyman J. Seely was elected an Honorary Member of the Club for two months, viz., to April 23rd, 1915.

Aviators' Certificates.—The granting of the following aviators' certificates was confirmed:—

- 1073 Viscount Exmouth (Maurice Farman Biplane, Royal Flying Corps, Shoreham). Jan. 25th, 1915.
- 1074 Flight Sub-Lieut. Richard Cecil Petter, R.N.A.S. (Grahame-White Biplane, Grahame-White School, Hendon). Feb. 11th, 1915.
- 1075 Flight Sub-Lieut. Eustace de Courcy Hallifax, R.N.A.S. (Grahame-White Biplane, Grahame-White School, Hendon). Feb. 11th, 1915.
- 1076 (Hydro-Aeroplane) Ralph Oliver Lashmar (N.A.C. Seaplane, N.A.C. School, Lake Windermere). Feb. 11th, 1915.
- 1077 Flight Sub-Lieut. James Edward Baker Bere Maclean, R.N.A.S. (Bristol Biplane, Royal Naval Air Station, Hendon). Feb. 12th, 1915.
- 1078 Flight Sub-Lieut. Harris Holberton Square, R.N.A.S. (Bristol Biplane, Royal Naval Air Station, Hendon). Feb. 12th, 1915.
- 1079 Flight Sub-Lieut. Gerald William Hilliard, R.N.A.S. (Grahame-White Biplane, Grahame-White School, Hendon). Feb. 12th, 1915.
- 1080 Walter Laidler (L. and P. Biplane, London and Provincial School, Hendon). Feb. 12th, 1915.
- 1081 Flight Sub-Lieut. Christopher Eric Wood, R.N.A.S. (Grahame-White Biplane, Grahame-White School, Hendon). Feb. 12th, 1915.
- 1082 Charles Walter Graham (Grahame-White Biplane, Hendon). Feb. 12th, 1915.
- 1083 Hazelton Robson Nicholl (Maurice Farman Biplane, Military School, Brooklands). Feb. 16th, 1915.
- 1084 George William Bransby Williams (L. and P. Biplane, London and Provincial School, Hendon). Feb. 16th, 1915.
- 1085 Richard Burnard Munday (Maurice Farman Biplane, Military School, Brooklands). Feb. 16th, 1915.
- 1086 Lieut. Nicolas Alexander Meletopoulos, R.N. (Greece) (Sopwith Hydro-biplane, Royal Hellenic Naval Air Station, Eleusis, Greece). Sept. 22nd, 1914.
- 1087 Lieut. Aristides Moraitinis, R.N. (Greece) (Sopwith Hydro-biplane, Royal Hellenic Naval Air Station, Eleusis, Greece). Sept. 22nd, 1914.
- 1088 Lieut. Constantin Panagiotou, R.N. (Greece) (Sopwith Hydro-biplane, Royal Hellenic Naval Air Station, Eleusis, Greece). Sept. 29th, 1914.
- 1089 Flight Sub-Lieut. Ralph Squire Sorley, R.N.A.S. (Short Biplane, Royal Naval Flying School, Eastchurch). Feb. 12th, 1915.
- 1090 Flight Sub-Lieut. Robert Souray, R.N.A.S. (Grahame-White Biplane, Royal Naval Air Station, Hendon). Feb. 16th, 1915.
- 1091 Flight Sub-Lieut. Robert Hudson Routledge, R.N.A.S. (Bristol Biplane, Royal Naval Air Station, Hendon). Feb. 16th, 1915.
- 1092 Jack Noakes (L. and P. Biplane, London and Provincial School, Hendon). Feb. 20th, 1915.
- 1093 Arthur Richard Howe Browne (Maurice Farman Biplane, Military School, Brooklands). Feb. 20th, 1915.
- 1094 Robert Edward Aylmer Werge Hughes-Chamberlain (Maurice Farman Biplane, Military School, Brooklands). Feb. 20th, 1915.

The following Aviators' Certificates were granted:—
1095 Flight Sub-Lieut. George Henry Beard, R.N.A.S. (Wright Biplane, Beatty School, Hendon). Feb. 20th, 1915.
1096 William Evan Collison (Maurice Farman Biplane, Military School, Brooklands). Feb. 22nd, 1915.

Insurance of Aviators' Motor Cars.

As the result of representations made by the Club, a leading insurance company has withdrawn its refusal to insure aviators' motor cars.

Eastchurch Railway Arrangements.

Notification has been received from the South Eastern and Chatham Railway that, in consequence of the general curtailment of the train services to meet the very large and increasing demands of the Military Authorities, they have been reluctantly compelled to withdraw, on and from the 22nd inst., the cheap ticket arrangement hitherto granted to the Royal Aero Club.

ANNUAL GENERAL MEETING.

The Annual General Meeting of the Members of the Royal Aero Club of the United Kingdom will be held on Tuesday, March 23rd, 1915, at 5 o'clock, at 166, Piccadilly, London, W.

Notices of Motion for the Annual General Meeting must be received by the Secretary not less than twenty-one days before the Meeting, and must be signed by at least five Members. The last day for the receipt of notices of motion is Tuesday, March 2nd, 1915.

Committee.

In accordance with the rules, the Committee shall consist of eighteen Members. Members are elected to serve for two years, half the Committee retiring annually. Retiring members are eligible for re-election.

The retiring Members of the Committee are:—

Griffith Brewer.	Flight Commander F. K. McClean,
Ernest C. Bucknall.	R.N.A.S.
John D. Dunville.	Alec Ogilvie.
Col. H. C. L. Holden, C.B.,	Mervyn O'Gorman, C.B.
F.R.S.	C. F. Pollock.

Prof. A. K. Huntington.

Any two Members of the Club can nominate a Member to serve on the Committee, provided the consent of the Member has been previously obtained. The name of the Member thus nominated, with the names of his proposer and seconder, must be sent in writing to the Secretary not less than fourteen days before the Annual General Meeting. The last day for the receipt of nominations is Tuesday, March 9th, 1915.

The following Members have been nominated:—

Griffith Brewer.	Col. H. C. L. Holden, C.B., F.R.S.
Ernest C. Bucknall.	Prof. A. K. Huntington.
John D. Dunville.	C. F. Pollock.

A ballot paper for the election of nine Candidates to the Committee of the Club will be forwarded to each Member at least seven days before the date of the Annual General Meeting.

THE FLYING SERVICES FUND.

Administered by The Royal Aero Club.

THE Lords Commissioners of the Admiralty and the Army Council having signified their approval, the Royal Aero Club has instituted and will administer a fund originated by M. André Michelin for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependents of those who are killed.

The fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers and men.

In view of the great utility of the work of the Flying Services, evidence of which has been repeatedly given in the official despatches of the Commander-in-Chief, the skilful and daring flights into enemy country, and the protection afforded by the continuous patrolling of our

coast by aircraft, it is confidently expected that the British public will welcome this opportunity of showing their appreciation by subscribing promptly and liberally to the fund.

The Right Hon. Lord Kinnaird has kindly consented to act as Honorary Treasurer to the Fund.

Subscriptions should be forwarded to The Flying Services Fund, The Royal Aero Club, 166, Piccadilly, London, W., or to Barclay and Co., Ltd., 1, Pall Mall East, London, S.W. Cheques should be crossed "Barclay and Co., Ltd."

TULLIBARDINE, Brig.-General,
Chairman of the Royal Aero Club.

£	s.	d.	£	s.	d.
Total Subscriptions received to February 17th, 1915	6,152	0	Vice-Admiral Mark Kerr, R.N.	5	0
Isthmian Club	5	0	W. Joynson-Hicks, M.P.	10	10

	£	s.	d.		£	s.	d.
The Misses Vizard ...	1	10	0	Officers and men of the			
Herbert Clifford ...	0	10	6	Central Air Office,			
The Daimler Co., Ltd.	250	0	0	Sheerness ...	22	0	6
Vickers, Ltd.	250	0	0	S. E. Saunders, Ltd.	5	0	0
Walter Simpson ...	0	10	0	The Zenith Carburetor			
H. R. Davies ...	10	0	0	Co., Ltd. ...	2	2	0
Lieut.-Com. Dowding,				G. and J. Weir, Ltd.	50	0	0
R.N. ...	3	0	0	The Bosch Magneto			
Murray's Club ...	43	0	0	Co., Ltd. ...	5	5	0
Herbert J. Davies ...	0	2	6	Accles & Pollock, Ltd.	100	0	0
Miss Allan White ...	5	0	0	Sir T. V. S. Gooch,			
R. Forbes-Bentley ...	2	2	0	Bart. ...	5	0	0
Lady Ramsden ...	5	0	0				
Vere W. Wood ...	1	0	0	Total, February 24th,			
Col. E. S. Bridges ...	10	0	0	1915 ...	£6,943	13	0

The Grahame-White Aviation Company are very kindly arranging a Flying Meeting to be held at the London Aerodrome, Hendon, in aid of the Flying Services Fund. The date of the Meeting will be announced shortly.

166, Piccadilly, W. B. STEVENSON, Assistant Secretary.

FROM THE BRITISH FLYING GROUNDS.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Monday, last week, Prob. Flight Sub-Lieuts. Cain, Johnson (new pupils), Ferrand, Irving, Reed, and Tollemache straights with Instructors Manton, Winter, and Russell. Prob. Flight Sub-Lieut. Souray circuits, 8's, and landing practice.

Tuesday, Prob. Flight Sub-Lieuts. Dunn (new pupil), Cain, Ferrand, Hood (new pupil), Johnson, Reed, and Tollemache straights with Instructors Manton, Russell, and Winter. Prob. Flight Sub-Lieut. Souray circuits, &c., and afterwards *brevet* tests, for which he gained pilot's certificate.

Wednesday, too windy for flying practice.

Friday, Probationary Flight Sub-Lieuts. Everett, Hards (new pupils), Ferrand, Hood, Irving, Johnson and Reed straights with Instructors Manton, Russell and Winter.

Saturday, Probationary Flight Sub-Lieuts. Cain, John, son and Reed, straights with Instructors Manton-Russell and Winter and afterwards solo straights. Probationary Flight Sub-Lieut. Irving, straights with Instructor Manton, then solo straights, afterwards half circuits. Dunn, Everett, Ferrand, Hards, Hood, Morrison and Tollemache, straights with Instructors Manton, Russell and Winter.

Sunday, Probationary Flight Sub-Lieuts. Cain and Irving, half circuits and circuits alone. Probationary Flight Sub-Lieuts. Johnson and Reed solo straights, and Dunn, Ferrand, Hards, Hood, Morrison and Tollemache straights with Instructors Russell, Manton and Winter.

Beatty School.—Monday, last week, Messrs. P. E. Cornish (10 mins.), V. E. Faning (12), H. H. Bright (10), J. H. Vickers (10), Y. K. Leong (12), and Lieut. Rimington (8).



A GROUP OF PUPILS AND STAFF AT THE LONDON AND PROVINCIAL SCHOOL AT HENDON.—From left to right, J. Noakes, J. Chiswall (Head Fitter), E. C. England Derwin, H. Warren, J. H. Moore, W. T. Warren (Instructor), M. G. Smiles (Instructor), M. J. Lindsay (Secretary), P. A. Watson, C. F. Collett, W. Laidler and H. King (Shops Foreman). Standing on the machine, G. W. Bransby Williams and F. A. Lincoln.

Tuesday, Messrs. G. Beard (10 mins.), J. H. Ormsby (15), Gerrit Forbes (8), H. H. Bright (10), Y. K. Leong (10), and Lieut. Rimington (10), Mr. Merton out on



Copyright, F. N. Birkett, from the F.N.B. Series of Aviators.

Flight Sub-Lieut. Frank Besson, R.N.A.S., who has secured his *brevet* recently at the Grahame-White School, Hendon.

the new *brevet* machine doing some fine banking and v.p.'s, the flight extending over 20 mins.

Wednesday and Thursday, machines out for short time, but no training possible owing to bad weather.

Friday, Messrs. Gordon Bond (3 mins.), P. E. Cornish (6), G. Beard (10), G. Perrot (10), J. F. Roche (5), Gerrit Forbes (15), R. F. Laver (10), and Lieut. Rimington (8). During the afternoon Mr. Merton out on *brevet* machine, putting in a lot of flying, during which he reached the height of 2,500 ft., making a fine spiral v.p. from that height.

Saturday, Messrs. Gordon Bond (10 mins.), P. E. Cornish (10), G. Beard (10), G. Perrot (20), J. F. Roche (25), B. de Meza (10), A. G. Hayward (10), Gerrit Forbes (15), H. H. Bright (20), R. F. Laver (15), P. C. Cooper (10), L. Monfea (10), Y. K. Leong (10), B. B. Lewis (10), and Lieut. Rimington (10).

Sunday, Messrs. Gordon Bond (10 mins.), P. E. Cornish (10), G. Perrot (15), H. H. Bright (8), R. F. Laver (10), J. H. Vickers (5), P. C. Cooper (15), Y. K. Leong (6), B. B. Lewis (10), and Lieut. Rimington (22).

During Saturday afternoon, Sub-Lieut. G. Beard, R.N.A.S., made his test flights for his certificate, which he obtained after making some very good banks, and landing on the mark on each occasion. During his height test he attained the height of 625 ft., making a fine v.p. from that height with his engine cut off.

Instructors for the week, Messrs. G. W. Beatty, G. Virgilio, W. Roche-Kelly, and C. Prodger. Machines in use, two-seater biplanes fitted with controls arranged in duplicate.

Hall School.—During last week the following pupils were receiving tuition with instructors for week, Messrs. J. L. Hall and J. Rose: Messrs. A. Davy, Furlong, Waterson, Lieut. Moncrieff, and Lieut. Blyth.

Monday, a gale prevailed. On Tuesday, Lieut. Blyth

(22 mins.), Waterson (10), A. Davy (10), alone on machine in full control.

Wednesday, Thursday, and Friday the gale continued, but when the wind dropped later in evening, J. L. Hall out testing *brevet* machine.

Saturday, Lieut. Blyth (25 mins.), A. Davy (26), solo in full control. McConnochie four circuits at 450 ft., and one figure eight.

Sunday, pupils receiving tuition with Instructor J. Rose, Messrs. Furlong, A. Davy, Lieut. Blyth. Pupils practising alone with full control, Lieut. Blyth (15 mins.) and Davy (10).

London and Provincial Aviation Co.—Monday, last week, school out 4 p.m. Test flight, M. G. Smiles; Mr. Watson rolling, Messrs. England Derwin and Lincoln straights; Mr. Bransby Williams, circuits and eights.

Tuesday, school out all day. Test flight, M. G. Smiles; Mr. Bransby Williams circuits, subsequently flying for *brevet*, which he obtained in excellent style; Mr. Noakes circuits and eights, now ready for tests; Messrs. Lincoln, Moore and England Derwin straights; Mr. Watson rolling.

Friday, test flight, W. T. Warren; Messrs. Lincoln, Moore and England Derwin straights.

Saturday, test flight, M. G. Smiles; Mr. Noakes circuits and eights, then flew for certificate, gaining same in splendid style; Mr. Bransby Williams (extra practice) circuits and eights; Messrs. Lincoln, Moore and England Derwin straights; Mr. Watson straights.

Ruffy-Baumann School.—Monday last week, pupils on 60 Caudron: Messrs. Hydon (11 mins.), Kenworthy (10).

Wednesday, solo flights by E. Baumann.

Friday, Messrs. King (12 mins.), Hydon (12), Jackson (12).

Saturday, Blandy (15 mins.), King (10), Hydon (16), Kenworthy (12). Instructors, E. Baumann and the James Brothers.

Sunday, Mr. Baumann took up many passengers on 60 Caudron.

Monday, out all day. Messrs. Hydon (10 mins.), Blandy (10), Jackson (5), Kenworthy (1), King (23), all making good progress.

Northern Aircraft Co., Ltd.

The Seaplane School, Windermere.—Flying possible on Monday, Tuesday and Friday last week. Mr. W. Rowland Ding gave instruction to Messrs. G. L. Raiton (15 mins.), A. Johnson (35), R. Buck (15), S. J. Sibley (31), with full and partial control.

R. O. Lashmar out for extra practice, and kindly gave some instruction to fellow students.

On Monday, Mr. Ding up with Lieut. T. Lindsay Bainbridge, who indulged in some revolver practice while flying. On Tuesday, Mr. Ding out on Avro, which has been overhauled and fitted with new type floats and chassis. No alteration of any kind was found necessary, the machine planing perfectly and getting off very quickly. Mr. Ding took her to 1,500 ft. straight away.

Machines in use, N.A.C. biplane and N.A.C. Avro biplane, 50 Gnomses.

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Glenn Curtiss Offers a Prize.

MR. GLENN H. CURTISS has presented to the Aero Club of America a \$5,000 trophy, together with five purses of \$1,000 each, one to be awarded for each of the next five years. The prizes will be competed for by officers of the Army and the Navy, and it is hoped that the first competition will be held in May. The conditions are now being drawn up.

EDDIES.

MARCEL DESOUTTER, whom I ran up against at the aerodrome the other day, told me that he is as busy as can be on the manufacture of the new and very light artificial leg which he invented some months since, and the excellence of which he has now himself thoroughly tested, as he has been using one of them for quite a long time now. It must be a great consolation to Desoutter to know that, although prevented by the loss of this member from taking an active part in the fighting, he is doing a great amount of good by supplying not only some of his unfortunate fellow pilots, but also others who have had the hard luck to lose one of their lower limbs, with what is probably one of the finest artificial substitutes in existence.

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The new "Mann" biplane, to which reference was made in "Eddies" a short time ago, was taken up for a couple of spins round the aerodrome and out over the Edgware road on the morning of Saturday last. The "man at the helm" was Mr. Rowland Ding, of the Northern Aircraft Co. After a preliminary circuit of the aerodrome, Mr. Ding made a slightly wider turn out over the houses round Collindale Avenue, and to demonstrate the stability of the new machine, flew it on one occasion for about a minute with his hands away above his head. Although the Anzani engine was not at its full power, chiefly due to the fact that the control wire had stretched somewhat, thus preventing the pilot from fully opening the throttle, the machine seemed to climb well, and the speed registered on the Ogilvie air-speed indicator was 55 to 60 miles per hour. This figure, in Mr. Ding's opinion, should be raised to well over 70 miles per hour when the engine has been properly tuned up.

x x x

As to the stability of the new Mann, Mr. Ding seemed altogether pleased with it, and in this connection it should not be forgotten that Ding has been used to having a very easy time at the control-wheel of the Handley-Page biplane, so that when he says that a new machine is stable, you may be assured that it is no dunce at its work. Mr. Mann is to be congratulated on the way in which he has solved a by no means easy problem of designing a *fuselage* biplane in which a gun can be mounted right in the nose of the body, where it can be fired through a very wide arc. It is to be hoped that the demonstrations of this machine, which will, I take it, be carried out as soon as everything is properly tuned up, will result in a substantial batch of orders, for it certainly seems to have great possibilities as a fighting biplane. In regard to illustrations of this new mount, well, you must just ask the Censor about them—you see, we have a due regard to the country's Imperial interests just now, and take no chances of helping our enemies. When the Censor says "go," why you may expect to have some interesting details of the Mann up to FLIGHT standard.

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Both visitors and *habitués* had the chance to see another new machine making her first efforts at Hendon last week, when one of the new Curtiss tractors, similar to the type described in FLIGHT of December 11th last, having arrived was soon erected and in flying order, the pilot forthwith giving her a preliminary trial. I was not fortunate enough to witness the flights, but heard afterwards that the engine was in a somewhat sulky mood, so that the first flights should really not be taken as a

criterion of what these machines are capable of doing. A brief inspection gives a favourable impression of its general lines. The body is very roomy in front, and almost totally encloses the 90-100 h.p. Curtiss engine, in front of which is mounted the radiator. The propeller appears to be somewhat on the small side, but I have no doubt that it is in reality quite big enough, and that this impression was simply caused by the fact that it is of a slightly different type to those usually seen on machines of British design. The two cockpits, for pilot and observer, looked very roomy and comfortable, and the long exhaust pipes, one on each side of the body, should effectively prevent any of the gases from being blown back into the faces of the occupants. On the whole, the Curtiss tractor is a very businesslike looking affair, and certainly far ahead of most of the specimens of American-designed biplanes that I have happened to come across.

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I have had occasion from time to time of commenting on the regularity with which Mr. Birchenough takes Henry and Maurice Farmans across to Farnborough. Saturday last must, I should think, be a bit of a record, however. Starting off from Hendon in the morning on a Maurice Farman, accompanied by Mr. C. Gresswell, the Aircraft Company's able manager, Birchenough steered her over to Farnborough, where she was put through her trials. Early in the afternoon he and Mr. Gresswell returned on the De Havilland gun-'bus, and later in the afternoon Birchenough was off again on a Henry, after giving a few demonstrations of the steep banks for which he is now famous. Both he and Gresswell looked a bit cold round the nose on their return from Farnborough, so I hope that Mr. de Havilland will hurry up with that heating arrangement of his for keeping the *nacelle* warm and cosy during this delightful weather.

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Flight-Sergeant A. E. Barrs, R.F.C., who has now practically recovered after his accident in France, is, he tells me, re-joining the Flying Corps on March 3rd, and hopes to be sent out to the front again before long, so it seems that the injury to his leg, whatever other effects it may have had, has certainly not resulted in cold feet. Barrs tells me that that other old-time Hendon favourite, Reginald Carr, is back on leave for a few days, but that he is so busy calling on his many friends, that it is almost impossible to get hold of him, but at any rate he is well and happy, and will be going back to the front in a few days' time.

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Talking about Carr reminds me of "Lizzie" and the evolutions performed by these two in the good old days. Although "Lizzie" does not now indulge in looping, she has not yet by any means settled down to a steady trotting round the course at Hendon, but seems to take a delight in doing steeply banked right and left hand spirals, piloted by her new owner, Mr. Graham, who handles her remarkably well, considering that he only took his ticket a little over a week ago. Practically the only part of his piloting which is not yet quite all that it might be, is the landing, but this is improving, and with a little more practice he should fulfil the expectations of his instructors.

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I had an invitation the other day to look over the new offices of the L. and P. Aviation Co. in Collindale

Avenue, next to the restaurant outside the gates. It was very opportune, for the rain made a prolonged stay in the open anything but a pleasure. I found the new offices well appointed, and Messrs. Warren, Lindsay and Smiles know how to make their friends comfortable while "talking shop," to the accompaniment of "My Lady Nicotine." While enjoying these comforts I was told some of the future plans of the firm, but, as I think I mentioned before, Warren believes in doing before talking, so "nuf said." Just wait and see!

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The all-metal aeroplane is still a thing of the future, at any rate as far as this country is concerned, but there are many who think it is bound to come some day, and quite a lot has been going on in this direction abroad. A strong believer in this type of construction is Mr. Mayro, of the Mayro Steel Construction Co., down Shaftesbury Avenue way, and he is ever so interesting when he is expounding his views and demonstrating their practicability with some convenient specimen of his system of metal construction for aeroplanes. According to Mr. Mayro, who has, by the way, had considerable experience in connection with metallurgy, one of the reasons why metal construction has not been more extensively employed is that when such attempts have been made, full advantage has not been taken of the peculiarities of the metal, which has simply been employed to replace some other material, whilst being kept to the same form as the original that it was intended to replace. The metal Mr. Mayro uses chiefly is an aluminium alloy, and the advantages claimed are obtained by building up the metal in various forms of corrugations of different section. For obvious reasons it is as well I should not here go into minute details, but one example of this work that I saw

was an *aileron* for a well-known type of aeroplane. The weight was about the same, but the strength was claimed to be about two or three times as great as that of a similar *aileron* built up of wood in the usual way. Mr. Mayro says that he can build any design of wing which will be of exactly the same dimension, have practically the same characteristics, and yet be considerably stronger than the wood-built wing. Owing to the outbreak of war, and pressure of other important work, the development of his system has been temporarily checked, but with larger works in contemplation, Mr. Mayro hopes to be able to resume his efforts in this direction in the near future.

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Whether it is another attempt by the Germans at provoking a war with the United States I do not know, but I hear that the German Wright Company of Berlin has been dissolved. Ah, well! At any rate I suppose that will mean that we shall in the future have one less type of "high speed scout" to contend with.

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All our pilots are not at the front just now, as I noticed several the other night at Daly's Theatre, witnessing that charming musical play "A Country Girl" in which Mr. Robert Michaelis and Mr. W. H. Berry represent characters in the Naval Service. Possibly this fact had something to do with the presence of the aviation brigade, or it may have been the introduction into the first act (Daly's fame for up-to-dateness is proverbial) of a Taube aeroplane, which is promptly brought down by one of the naval heroes. Anyway, the boys are not bad judges of what is worth seeing, as the cast also includes Miss Gertie Millar and a very clever and sprightly "mate" to Berry, Miss Mabel Sealby.

"ÆOLUS."

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GERMANY'S WRECKED AIRSHIPS.

In the last issue of FLIGHT we were able to include brief mention of the wreck of the German naval Zeppelin "L3," on the Danish island of Fanoe on the 17th inst. A few hours later came the news that a second airship had been abandoned off Blaavand on the west coast of Jutland, and it subsequently transpired that this was the "L4," the newest Schutte-Lanz airship, also belonging to the German Navy.

Writing of the first disaster, the *Daily Mail* correspondent at Copenhagen said:—

"The airship had left Hamburg at 4 a.m., and had been cruising during the day off the north-west coast of Denmark. Her motors failed one after the other, and at about six in the evening the airship landed with a crash on the beach of Fanoe Island, snapping in two as she struck. Her crew of 2 officers and 14 petty officers and men jumped out uninjured. Immediately after the airship landed she burst into flames. The captain declares that he set the Zeppelin on fire purposely "in order to prevent her from being blown further ashore and imperilling lives and the adjacent buildings." In any case the ship was already utterly destroyed. The crew had time to land their ammunition and bombs. They were interned for the night at a local hotel. Much activity on the part of airships has been reported during the last two days on the west coast and at the bottom of the Great Belt. In some cases the airships have been seen exchanging signals with warships."

A *Daily Telegraph* correspondent gave the following additional details:—

"Her commander was Capt. Fritz, and her second officer was named Luncker. The commander stated that the situation of those on board the airship was most critical, as he feared that the bombs which it carried would have caused an explosion. Capt. Fritz stated that he was on the way to reconnoitre the North Sea, and

that he himself fired the airship, after the motors were damaged, because he wished to prevent the Danish authorities seizing the airship and learning the secrets of her construction."

According to other information from Copenhagen the officers and crew were interned at Nordby, while the Danish military authorities took possession of the remains of the airship, which included four large bombs and two machine guns.

The following message was received in Amsterdam from Berlin on the 18th inst. :—

"The airship L3, while on a reconnoitring voyage, descended during a storm owing to a defect of its motor on the west coast of Jutland. The airship has been lost, but the crew were saved."

With regard to the second wreck, the first news was received through eleven men presenting themselves at the coastguard station, north of Blaavand, first stating that they were the crew of a trawler sunk by a mine, and then, on being interrogated by a magistrate, that they were the survivors of an airship which they had had to abandon. The story of the wreck was thus told by the *Daily Mail* Danish correspondent:—

"It now appears that the second German airship lost on the west coast of Denmark was 'L4,' a Schutte-Lanz, one of the most recently constructed. She was returning south when she ran into bad weather, first meeting with fog and then heavy storms of sleet and snow. Two of her motors failed, and the great airship becoming unmanageable, the crew decided to abandon her. When near land and over the surf at Boersmose, near Blaavand, on the west coast of Jutland, the men jumped from the airship. Two officers and nine petty officers and men landed safely, but one man who delayed taking the plunge fell from a considerable height and

broke both legs. There is no news so far of the other four men, who were either drowned or carried away in the airship, which as soon as it was relieved of the weight of the crew ascended and disappeared seawards. Those of the crew who landed safely made their way to the coastguard station, carrying their wounded comrade with them. The commander of the aircraft, Captain Count von Platen, claimed to be allowed to return to Germany on the ground that he was merely shipwrecked. He refused to give his word of honour not to attempt to escape. The crews of both the wrecked airships will be interned on the island of Odense."

It was subsequently reported that two bodies, apparently men from the wrecked airship, had been washed ashore.

With regard to the derelict it is interesting to note that a *Daily Mail* correspondent at Christiania wrote on the 18th inst. :—

"The Norwegian steamer 'Alonso,' which arrived yesterday from Christiansand, after a very stormy passage from Falmouth, reports that when fifteen miles south of Oxoe lighthouse she sighted a large airship apparently drifting northwards, and evidently badly damaged, as it was flying very low, and at times skimmed the crest of the waves. While this may have been a third Zeppelin in distress, it is thought here that it was the airship L4, which was driven down off Blaavand."

The following message was received in Amsterdam from Berlin on the 19th inst. :—

"During a heavy gale from the south, which occasioned the

✱ ✱ ✱ ✱ AIRCRAFT AND THE WAR.

A *Daily Mail* correspondent, writing from the North of France on February 13th, said :—

"The story of the air raids of the last two days on the German positions along the Belgian coast is as follows :—

"On Thursday morning (February 11th) at about 8.30 ten aeroplanes passed high over Dunkirk, coming from the west, and proceeded to Belgium *via* the coast. These were British machines which had flown direct from England, and they were soon lost in the clouds. An hour later, however, all the aeroplanes were back again, as they had met heavy snowclouds and only three or four had been able to carry out their mission. One of the machines fell into the sea off Dunkirk. The airman was picked up and the waterplane was towed in. The raid was therefore postponed until night, and at 10 p.m. a second start was made. A methodical bombardment of Zeebrugge was then begun. Each of the waterplanes in turn rose from the sea, dashed into Zeebrugge, dropped its bombs, and returned to the base at sea. As soon as one machine returned another left, and thus seventeen consecutive visits were paid to Zeebrugge. While this was going on from the sea British and French aeroplanes left the aerodrome on land and completed the work of their waterplane comrades.

"On Friday a further raid was carried out. The entire fleet of waterplanes and the full fleet of British biplanes and French monoplanes took the air together and started all over the German positions in Flanders. Some went as far as Zeebrugge again, while others visited Ostend and Blankenberg. One hundred and forty bombs, of which thirty were very large, were dropped on various ammunition and food depôts. The extent of the damage done is not known, but there were German submarines at Zeebrugge, while the Ostend railway station, which was set on fire, was still burning this afternoon, when some French airmen made a reconnaissance as far as Ostend."

A Sluis correspondent of the *Telegraaf* reports that during the recent British air raids last week a bomb struck a tramway car at Blankenberg, killing 8 German soldiers and wounding 50 others, 7 of whom died the following day.

Mr. James Dunn, writing to the *Daily Mail* from Rotterdam on the 18th, said that he heard from Sluis that in the air raid on Zeebrugge on the previous Tuesday, two Belgian trawlers which were being used for minelaying were sunk and a section of the Zeebrugge railway was destroyed.

The following details of the damage done during the British raid on Ostend and Zeebrugge last week were reported by the *Tyd* last Monday :—

wreck of the airship L3, the airship L4 was also forced to descend, owing to a motor defect. The accident happened near Blaagandshuk, in Denmark, and the airship drifted towards the sea. Eleven men, including the commander, were saved. Four are missing."

It is reported from Copenhagen that one of the officers of the wrecked airships stated that they took part in the recent air raid on Norfolk coast towns. It also appears that owing to the discontinuance of British weather reports the Germans were ignorant that a gale was approaching from the direction of England; otherwise they would have abandoned the reconnoitring expedition which ended so disastrously, and provided exactly the opposite sort of announcement to that which was awaited so eagerly in Berlin on "The Day."

A *Daily Mail* correspondent at Copenhagen sent the following message on Tuesday :—

"The authorities at Fanoe to-day sent to Copenhagen the four powerful motors taken from the wreck of the Zeppelin L3. The aluminium frame, weighing about seven tons and valued at about £2,000, is being broken up and will be sent to Esbjerg to be melted down.

"Some sensation was caused to-day by the appearance of another Zeppelin over Fanoe. It was flying very low and circled round over the wreck of L3, the crew closely observing what was being done with the wreck. After half an hour's observation the Zeppelin made off in a southerly direction."

"At Blankenberg sixteen soldiers were killed, and many wounded. At Zeebrugge one submarine was severely damaged, while several batteries along the coast to the south of the town were badly damaged. An extraordinary number of bombs were dropped on the coast batteries between Knocke and Zeebrugge, and a great number of the guns were destroyed. An officer and seven men were killed near Knocke, and many of the soldiers who were serving the batteries shared their fate. These men have been buried in the dunes, while the officer has been buried in the Knocke cemetery. As showing the carefulness of the aviators it may be stated that at Zeebrugge not a single civilian house was hit or a single civilian injured."

A special correspondent of the *Daily Telegraph*, writing from Rotterdam on the 18th inst., said :—

"At Calais there has arrived a Taube, brought down in France a few days ago.

"I learn that the last big air raid by the Allies on the Belgian coast had even more valuable results than was indicated in official messages. In addition to damage to the coastal positions, the bombs played havoc with the German lines of communication inland. The visit to Ghistelles was the biggest and most unpleasant surprise of all. Here the enemy had established one of his bases, and the aviators, knowing this, paid it special attention. Near Westende many soldiers were killed or wounded by the bombs dropped on their positions.

"Yesterday, although the weather was very stormy an English aeroplane flew over Zeebrugge. Several German batteries concentrated their fire on it, but without scoring a single hit."

The following details of an aerial duel between a British and a German aviator, supplied by a correspondent at Sluis, were published in the *Tyd* on Saturday.

"The German continually endeavoured to rise above the British machine while always keeping some hundred metres away from it. But the British aviator succeeded in keeping above the German. They flew off in the direction of Bruges, where a sharp battle lasting nearly half an hour was fought, and created much excitement among the population.

"At first the Germans fired on the British machine, but they had to cease, owing to the great danger of hitting their own man. The British machine was still above the German, when suddenly the latter shot down to the earth, and was dashed to pieces in the middle of the village of Strandree, near Bruges.

"The victorious British aviator speedily rose higher and higher until he was out of range of the German guns, and finally disappeared in a south-westerly direction. The German airman was found to be dead, and his machine was nothing but a heap of splinters."

The following was reported from Amsterdam by Reuter's correspondent on the 17th inst :—

"An airship about 100 metres long, probably of the Parseval type, flew over the eastern part of Amsterdam this morning at a height of about 200 metres. The crew tried hard to keep the ship horizontal, but succeeded only for a few minutes, and then the ship again took a vertical position, and proceeded in the direction of the Zuyder Zee. A rope some forty metres long was hanging from the car. Farther on the line became entangled with telegraph wires, but the ship, with a bundle of wires on the rope disappeared in the direction of Schellingwoude. The airship had apparently been hit by shots."

Similar reports was received from Hoorn and Vieland. It would appear that the derelict was probably a Parseval-Siegsfeld balloon which had broken away.

Writing to the *Daily Express* from Rotterdam on February 18th, Mr. Percival Phillips says :—

"The captain of the Dutch steamer 'Helena' has described to me how his ship was held up on Tuesday forty miles from the Haaks lightship in the North Sea by a German airship. This experience of the 'Helena' shows that the Germans are using airships in their attempted blockade operations.

"The 'Helena' was overhauled by Zeppelin L5 at ten a.m. on Tuesday. The morning was clear, and in the sunshine the airship was seen at a great altitude approaching swiftly from the direction of the coast, and rocking like a ship in a rough sea. It flew directly over the 'Helena,' whose crew distinctly saw fifteen or twenty persons in the three cars, which were connected by a covered gangway. The men wore dark, close-fitting tunics, caps like hoods, and goggles. They watched the 'Helena' through glasses. In a kind of turret in the forepart of the airship the crew of a quick-firing gun were at their stations, and a great naval ensign flew at the stern of the gasbag. After a time the airship descended close to the sea, and hoisted signals ordering the 'Helena' to heave to. When the commander of the Zeppelin was satisfied of the identity and nationality of the steamer he apologised, ascended again, and returned in the direction of the coast."

In the Paris edition of the *New York Herald* of the 18th inst. it was stated :—

A large number of French aviators have been flying over various towns in Alsace, notably Bortenheim, Habstein (where bombs were dropped on an aviation park), Guebwiller, Colmar, Mulheim, Krazinger, and Chalombro. The aviators also flew over Homburg, and attacked the castle in which the German General Staff was quartered."

According to a report received in Paris on the 18th inst. from Dunkirk, a German aeroplane was brought down by artillery fire and Allied aviators. The pilot and the observer were killed by the explosion of their own bombs.

A *Morning Post* correspondent at Berne, writing on the 19th inst., said :—

"I hear from a trustworthy source that Germany is intensely busy building aeroplanes, and that in all the aerodromes beyond the Rhine thousands of young Germans are training as pilots and mechanics. Germany's ambition undoubtedly is that her aerial fleet should greatly excel that of the Allies."

Mr. A Beaumont, writing to the *Daily Telegraph* from Bale on the 19th inst., said :—

"French aeroplanes are also taking a part in the operations every day, and may be seen flying constantly over various towns along the Rhine, much to the dismay of the inhabitants. One who has just come from Freiburg-im-Breisgau tells me that one of these aeroplanes which recently flew over that town completely destroyed the aeroplane sheds, which took fire from the bombs that it had dropped."

The Copenhagen correspondent of the *Morning Post* reported the following under date of the 20th inst :—

"A Zeppelin passed late last night over Mariager, on the east coast of Jutland, flying from the south-west to the north. The airship was fully lighted up and easily discernible."

The Petrograd correspondent of the *Morning Post*, in a despatch dated February 21st, said :—

"The Austro-German main armies apparently have some means of communication with the invested fortress of Przemyśl, probably by

wireless. An aeroplane containing two Austrians was brought down a couple of days ago in an attempt to leave the fortress, and the following nights two attempts at a sortie were made, and duly driven in again by the Russian besieging force."

According to information received from Belfort on Monday, the French aviators who bombarded Freiburg, in Breisgau, as mentioned in the official *communiqué*, on their return dropped bombs on the barracks at Mülhausen.

A *Daily Telegraph* correspondent at Rotterdam reported the following on Monday :—

"At midday yesterday a Zeppelin was seen from Schiermonnikoog, a Dutch island, flying over the sea in an easterly direction. At the same place at six o'clock in the evening a heavy explosion was heard in a north-westerly direction."

Regarding the airship raid on Calais on Monday, a *Morning Post* correspondent reported :—

"During the early hours of Monday morning a Zeppelin raid took place at Calais. The airship, which apparently was accompanied by an aeroplane, was first observed about 4 a.m. at Sangatte, near Cape Blanc Nez, coming from the direction of the sea. It then circled to the left, and several bombs were dropped in the vicinity of Fontinettes, a residential suburb on the extreme outskirts of Calais, five civilians being killed. The airship next passed over the eastern portion of the town in the direction of Dunkirk, and was fired upon, but succeeded in escaping.

"No damage of the slightest military consequence was effected, but one or two private residences were damaged at Fontinettes. In one tenement two women, an old man, and a young fellow were killed through suffocation. In the same house two children were asleep, the one being killed and the other escaping. A chubby infant of eighteen months had a marvellous escape, being blown right across the room, with some slight scratches on his face."

Writing later on the same matter, a *Daily Mail* correspondent in Northern France said :—

"The Zeppelin bombs dropped on Calais in the neighbourhood of Les Fontinettes, a suburban station, suggest a very powerful explosive. One of the holes is quite 18ft. across, and buildings have been knocked about at an unusual range from the impact of the shell. The hour of the attack—4.30 a.m.—reveals the cardinal weakness of the Zeppelin as an engine of attack. It is like a bat. It cannot face the light for fear of its active and rapid enemies, the aeroplanes; and it cannot see very well in the dark. Its use seems to be that of 'frightfulness.' Among the five victims at Calais was one child of three years old and one old body of eighty. However, the onset upon Calais was doubtless—on further evidence—part of a scheme of greater activity. There is now no question but that these ships have been manœuvring along the coast, and apparently practising with signals."

The following message was sent to the *Daily Mail* on Tuesday from a correspondent at Porrentruy (Switzerland) :—

"Notwithstanding the recent protest from the Federal Council, a German aeroplane again flew over Swiss territory yesterday. Fired at by French troops stationed at Pfetterhouse, in Alsace, a Taube raider flew over the Swiss village of Beurnevésain, and was fired at by the Swiss infantry.

"It then flew in the direction of Sechesy, in France, and was attacked by machine and field guns. Eventually the German airman landed in the French lines at Seppois."

From Amsterdam came a report that on Monday morning, between two and four o'clock, frontier posts at Eede (Zeeland) saw a Zeppelin airship, with a dozen aeroplanes, going in a westerly direction.

A *Daily Mail* correspondent at Rotterdam reported the following on Wednesday :—

"In their anxiety to safeguard Zeebrugge from attacks from sea and air the Germans are now employing a captive balloon carrying two officers, who for hours search the sea and sky for aeroplanes or warships. My Flanders correspondent telegraphs that all this afternoon the balloon was swaying in a light breeze over Zeebrugge. The balloon is also provided with a telephone so as to be able to give warning to the workmen who are engaged at the electric power station and mole, and who make for the bombproof shelters on the first appearance of hostile aircraft or warships."



Edited by V. E. JOHNSON, M.A.

Some Remarks on Kites and Windmills.

DURING the whole time that this section of FLIGHT has been in existence, now more than three years, the writer has not received half-a-dozen communications relating to "kites." This is a somewhat striking fact, but it is nevertheless true. It is also a fact to be regretted, as we owe a great deal to the kite, mainly, perhaps, in the domain of meteorology, and this apparent absolute neglect is a matter for thought. The kite section of the Kite and Model Aeroplane Association has in the past, we believe, always been quite a small section, although an extremely keen one. So far as we know, no use has been made of kites in the present war, nor is there any war kite squadron in existence. The aeroplane has completely and totally eclipsed the kite, just as steam and the internal-combustion motor have completely superseded the windmill as a source of power for grinding corn and other purposes.

In war or, indeed, in the ordinary competitive business relations of daily life, it would be nothing less than the height of foolishness not to use the latest, most certain and reliable methods; but old and discarded things have a habit, not unfrequently, of suddenly acquiring in certain cases practical value, and their complete neglect can only leave their neglectors in the lurch at the critical moment. Any modern English engineer would probably only smile at the idea of using a windmill as a practical and reliable source of power for the generation of electrical energy. And yet such a system is in fairly common use in North Germany and Denmark, not only for the supply of isolated farm-houses, but even for village lighting and power production. It is true that in practically all these cases a steam or oil-engine is kept as a standby, yet it is found that the number of days in a year on which this engine is required are so few that anyone who proposes to light his house or to provide himself with power on a small scale need not go to this additional expense. So simple is the entire apparatus to construct that any aeromodellist could accomplish it with ease. Full instructions are given in a book which lies before me as I write, price 6d.

Now, apart from the desire to make use of the same, what have windmills to do with aeromodellists? They have or might have this. Aeromodellists with their knowledge of aerofoil surfaces, &c., and of the action of the wind on the same, might well, by the aid of a little experiment, improve the present type of sails or vanes, the efficiency of which, in many cases, must be remarkably low. Of course the two problems differ in many ways, but most windmill practice is hopelessly out of date in this respect. With respect to the question of kites, it is curious how few aeronautical enthusiasts appear to have studied both kites and model aeroplanes. We know, of course, of a few instances, but the line of demarcation has been a very sharp one indeed. And yet a small non-man-lifting kite is nothing but a captive model aeroplane.

Perhaps a few remarks on

The practical utility of the kite

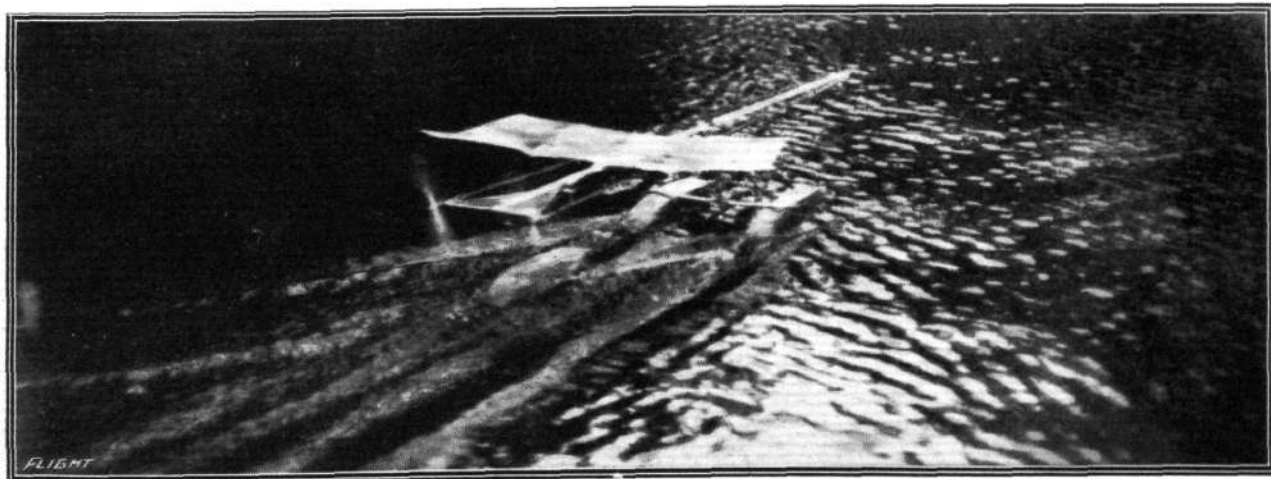
and a few of the things that it has done may not be out of place. In 1870 Dr. Franklin, by attaching a wire to a kite and leading it

down the string, the kite being flown during an approaching thunderstorm (a fearfully dangerous experiment, which no one should attempt to copy), was able to identify the tremendous effects of a lightning flash with the spark obtained from an electrical machine. In 1826 Dr. Pocock of Bristol made a large kite, 12 ft. by 15 ft., and used it for drawing a carriage along the road (note the recent revival of sand yachts, or, as they were called at Southport 25 years ago, Flying Dutchmen).

For a number of years, prior to the Spanish-American war, kites had been employed for taking bird's-eye views of the surrounding country. An altitude of 400 ft. only places several square miles of country within range of the photographic eye. A kite having a height of some 6 ft. and a surface of about 30 ft. should be sufficient for small scale experiments of this kind. All kinds of signalling both for war and other purposes has been carried on by means of kites for many years. In some instances (in the day time) three flags have been sent up, one representing the Morse "dash," another the "dot," a third serving to distinguish between the different signals on the line at the same time. At night coloured lights were employed; obviously these could be electrically manipulated. We should scarcely advise any enthusiast trying experiments of this kind, in the middle of Wimbledon Common say, at the present time, unless he was looking for trouble.

Quite a number of special apparatus using kites have been designed, and even patented, for saving life at sea. The trouble in actual practice, however, is that in the case of shipwreck the wind is generally blowing in towards the shore, and consequently the kite carrying the line, &c., would have to be flown from the ship or from a boat on the seaward side of the wreck. It must be admitted that in a case of this kind the rocket apparatus is decidedly quicker and more effectual, although there are, no doubt, cases in which the kite could be used with advantage. In the past kites were frequently employed by steeplejacks for the purpose of placing a thin line over the summit of a tower or chimney, by means of which a thicker one could be hauled up.

One of the latest uses to which the kite has been successfully applied is that of wireless telegraphy. It is obvious that by means of a suitable team of kites a much longer and higher wire for the aerial can be employed than when using a mast; and the necessary tackle is also much less. Several systems of man-lifting kites have been invented, and successfully put into practice, although so far as we know but little actual practical use of them has been made up to the present. It was suggested to the writer that they might be flown from the stern of a ship with a view to detecting the presence of submarines, now so much in evidence. Whether such a thing has actually been tried we do not know; as an experiment it would be a most interesting one. The travel of the ship through the water would, in a comparative calm, make the kite independent of any wind, but, if the ship were travelling so many knots an hour in the same direction as the wind, blowing at the same (average) velocity, any kite flying would



BRISTOL AND WEST OF ENGLAND AERO CLUB.—Mr. W. A. Smallcombe's hydro-aeroplane (with loaded wing tips) at the Zoological Gardens, Clifton. Weight 5½ oz. Photograph taken and enlarged by Mr. R. M. Haines.

obviously be impossible. It is probably in meteorology, however, that one of the greatest practical uses of kite flying seems likely to lie. There is a limit beyond which no single kite can be forced up into the air; this limit appears to be about 2,000 ft. The kite will rise no higher, no matter how much line be paid out, for the weight of the line and the action of the wind upon it prevent the kite from rising and allow it to recede only. If, however, we fly a number of kites team fashion (*i.e.*, one main flying line, with branches), the case is quite different. So long ago as 1897 at Blue Hill Observatory, U.S.A., four kites at the end of 20,100 ft. of steel piano wire, reached an altitude of 11,080 ft. In that year some 200 records from kites at heights of 100 to 11,000 ft. were obtained in all sorts of weather, which were of great use in meteorological investigations. So far as we know no such extensive record has as yet been done in England; although so long ago as 1847 kites were flown by Mr. Birt at Kew Observatory, for obtaining records of the temperature, humidity, &c. of the air, and more recently kites of an improved Hargrave type have been used.

Professor Langley's Model Work.

A short time ago there came into the writer's possession, a small pamphlet, apparently torn from a larger book, entitled "Story of Experiments in Mechanical Flight," by Samuel Pierpont Langley; the original paper appeared in the American Aeronautical Annual of 1897. It is not only of the deepest interest, a story of the most persistent patience and perseverance against apparently insuperable difficulties, but in view of the fact that, so far as we know, his most successful power-driven model, which made a flight of 1 min. 45 secs., still holds the record for an *engined* model, it seems, even apart from its historical interest, to be worthy of reproduction, at any rate, in its main features, together with certain remarks, either naturally arising out of the paper itself or having reference to the bearing of his work on that of the present day. We propose dealing only with the paper in so far as it relates to his experiments with actual models in free flight, omitting (save just one portion), for the present at any rate, his "whirling machine" or turntable experiments:—

"The record of my attempts to acquire the art of flight may be said to commence in the year 1889, when I procured a stuffed frigate birol, a Californian condor, and an albatross, and attempted to move them upon the whirling table at Allegheny. The experiments were very imperfect, and the records are unfortunately lost, but the important conclusion to which they led was that a stuffed bird could not be made to soar except at speeds which were undoubtedly very much greater than what served to sustain a living one, and the earliest experiments and all subsequent ones with models have shown that thus far we cannot carry nearly the weights which Nature does to a given sustaining surface without a power much greater than she employs. At the time these experiments were begun Pénard's ingenious but toy-like model was the only thing which could sustain itself in the air for even a few seconds. [Pénard, 1871, appears to be the first aeromodelist to have grasped the problem of longitudinal stability; he used longish strands of rubber. Some of his models flew 150 ft., and showed considerable stability.] Calculations founded upon its performance led to the conclusion that the amount of power required in actual free flight was far greater than that demanded by theory. In order to study the problem of stability in the case of a model in actual free flight, I constructed over thirty modifications of the rubber-driven model, and spent many months in endeavouring from these to ascertain the laws of 'balancing': that is, of stability leading to horizontal flight. Most of these models had two propellers, and it was extremely difficult to make them light and strong enough. Some of them had superposed wings, some of them had curved, and some had plane (*i.e.*, flat surfaced) wings; in some the propellers were side by side, in others one propeller was at the front and the other at the rear and so every variety of treatment was employed. [We wonder, in these models, how many more recent thought-to-be-discoveries were anticipated.] But all were at first too heavy, and only those flew successfully which had from three to four feet of sustaining surface to a pound in weight, a proportion which is far greater than Nature employs in the soaring bird, where in some cases less than half a foot of sustaining surface is used to a pound." [This last paragraph is intensely interesting, that initial success was achieved with lightly loaded models, as also the now well-known fact with respect to soaring birds.]

(To be continued.)



PUBLICATION RECEIVED.

Vade-Mecum for the Use of Officers and Interpreters in the Present Campaign: French and English Military Terms. By Eugène Plumon. London and Paris: Librairie Hachette et Cie. Price 2 francs.

CORRESPONDENCE.

The Kite and Model Aeroplane Association.

[1898] I should feel extremely obliged if you would publish the following in reply to a paragraph which appeared in your last issue:—

"With reference to Mr. H. H. Bedford's letter to which you refer in the last issue of FLIGHT, I should like to point out that Mr. Bedford wrote to me on November 8th, asking when he would receive the prizes which he had won during last season. I spoke to Mr. Bedford on Wimbledon Common on Saturday, November 14th, when I fully explained to him the circumstances, viz., that owing to Mr. Akehurst's absence on active service the prize distribution of the K. and M.A.A. would have to be postponed until the end of the war. I also mentioned at the time that I could not undertake Mr. Akehurst's work as general secretary of the Association owing to pressure of work of a much more important nature, and as far as I could judge Mr. Bedford, like many others, would have to be content to let matters rest until more favourable circumstances prevail."

With regard to Council Meetings, I regret to say that the "Aeronautical Society's" offices cannot be placed at our disposal during the war, and as I am not in a position to make further financial advances to the Association beyond those already named, I am unable to arrange any meeting at present. If, however, Mr. Bedford, or any other member or secretary of any affiliated club, can place free of charge a conveniently situated room at our disposal, I shall be pleased to convene a meeting for the discussion of the K. and M.A.A.'s affairs."

H. A. LYCHE.

95, East Sheen Avenue, East Sheen, S.W.



Messrs. Whiteman and Moss.

CONTINUALLY growing business under certain conditions has its drawbacks, and one who has recently experienced this is Mr. W. Moss, of Whiteman and Moss, Ltd.; he has had a good many difficulties to contend with since the war commenced, as owing to the absence of Mr. Roche at the front, the whole of the responsibilities of the firm devolved upon Mr. Moss's shoulders. As a consequence some slight delays and little upsets may have arisen, and for this he would ask the indulgence of his trade friends, especially in view of the fact that news has recently come to hand of the death of Mr. Roche in the fighting line. Mr. Roche joined up with the Queen's Westminsters at the outbreak of war, and met his death last month whilst fighting with the Expeditionary Force. Mr. Roche, who was the son of Capt. R. Roche, R.N., was a born fighter, and joined the Queen's Westminister R.V. in 1899, and soon after, although under the age limit, managed to get to the front in South Africa, in the ranks of the Hampshire Yeomanry. After being invalided to Cape Town, he selected the option rather than return home of going back to the front, where he was fighting until dangerously wounded.



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Index and Title Page for Vol. VI.

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